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(54) **A cutterhead for a portable power planer.**

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A cutterhead for a portable p wer planer

The invention relates to a cutterhead for a portable power planer including a cylindrical body having a substantially cylindrical surface and defining a rotational axis about which said cylindrical body rotates during normal operation of the power planer and a solid elongated cutting member defining a longitudinal axis and having a channel formed therein to define at least two cutting edges; said cylindrical body having an elongated recess formed therein for holding said cutting member; said recess extending in a direction parallel to said axis and defining a longitudinal aperture in said surface for accommodating one of said cutting edges; angular positioning means for angularly fixing said cutting member so that one cutting edge penetrates said aperture at a predetermined angle of elevation with respect to said surface.

As a rule, two blades are mounted at diametrically opposite positions within groove-like seats machined in the cylindrical body and extending inwardly from the cylindrical surface thereof. The two blades are part of cutting assemblies arranged in the groove-like seats and these cutting assemblies must satisfy well defined requirements.

Above all else and because of the high rotational speeds at which the cutterhead is driven, it must be possible to firmly fasten each blade to withstand the substantial workloads to which it is subjected.

In addition because the cutting edge of each blade wears down with use, its position within its seat must be adjustable to cause the cutting edge of the blade to project above cylindrical surface of the cutterhead after each sharpening by the required amount while at the same time setting the blade so that its edge is parallel to this surface.

It is readily apparent that while the firm fastening of the blade does not constitute a significant problem, it is far more difficult to provide an arrangement for positioning the blade that is so simple as to be readily utilized even by persons who are not necessarily experts and who frequently use tools of this type. Further it is desirable that the arrangement for positioning the cutting member be simple and economical. Also, the means for tightly seating the cutting member in the cylindrical body should be of simple configuration and easy to set.

To meet these requirements the blade holder according to the DE—AS 1 528 204 has a square basic body at the four angles of which four blades are projecting. The blade holder is supported with two rear surfaces of the cutting blade being rectangular to each other on two supporting surfaces correspondingly arranged in the supporting body and fixed by a further supporting surface, which is parallel t ne of the two supporting surfaces. After the wear of one cutting blade the blad holder is turned by 90° and that until all the four cutting blades are worn. It is not possible to resharpen and readjust the cutting blades to equalize the wear, since then the position of the blade holder would no longer be reliable.

In another construction (FR—PS 1 522 817) the blade holder has a cylindrical shape in the surface of which two recesses are made being radially arranged to one another. One border of each of these recesses is shaped as a cutting blade. The cylindrical blade holders are held in the supporting body in correspondingly formed cylindrical bores. From this bore a slot is extending in the direction of the fibers of the cylindrical supporting body, so that the surface of the cylindrical supporting body can be clamped by means of a screw against the blade holders. The blade angle is maintained due to the function of the blade holder in the bore because of the contact pressure of the screw. It is difficult to exactly adjust the angle and uncertain to maintain the adjusted angle at the occurring high forces.

Similar to this a particular cylindrical blade holder is held in the supporting body (GB—PS 1 437 164). The cylindrical blade holder is fixed in its angle in the supporting body by a stud bolt piercing through the wall of the supporting body. The cutting blade itself is received in a slot in the blade holder and fixed therein by another stud bolt. The blade has only one cutting edge which must always be resharpened or exchanged after the wear.

In view of the foregoing, it is an object of the instant invention to provide a cutterhead for power planers wherein the need for adjusting the position of the cutting member in its seat is obviated altogether and wherein the only step required of the operator after inserting the blade in the cutterhead is that of the fastening the cutting member.

It is another object of the invention to provide a cutterhead for a portable power planer wherein the cylindrical body of the cutterhead is configured to hold the cutting member against centrifugal force and only a screw is needed for tightly seating the cutting member in place in the cylindrical body.

It is another object of the invention to provide a cutterhead wherein the cutting member is angularly positioned simply and inexpensively.

The foregoing objects are realized with the cutterhead described above which according to the invention is characterized by said recess having a recess wall extending inwardly away from said aperture to surround and hold said cutting member against the centrifugal forces acting thereupon during the rotation of said cylindrical body; screw means m unted in said cylindrical body for directly engaging said cut-

ting member to tightly seat the latter against said recess wall; said cutting member having tw channels formed therein t define four cutting edges extending parallel to said longitudinal axis, said cutting member having rounded surfaces between said channels; said recess wall defining a curved surface having a curvature corresponding substantially to the curvature of said rounded surfaces; said angular positioning means including at least one pin projecting into said recess for engaging said cutting member in one of said channels thereby positioning said one edge at said predetermined angle; and said screw means being a screw threadably mounted in said cylindrical body for advancing into said recess and engaging said cutting member to tightly clamp said cutting member at its rounded outer surfaces against said curved surface of said recess wall.

It is still another object of the invention to provide a cutterhead adapted to receive a blade holder so that the blade holder is clamped and tightly held in such a manner that the cutting blade too is tightly held without requiring any additional holding devices.

This object of the invention is achieved by providing a blade holder which is adapted to be seated in the recess seat of the cylindrical body of the cutterhead. The blade holder has a slot formed therein for receiving a flat cutting blade. Angular positioning means angularly fix the blade holder in the recess seat so that the cutting blade penetrates the aperture of the recess at a predetermined angle of elevation with respect to the cylindrical surface of the cylindrical body. A screw mounted in the cylindrical body directly engages the blade holder to tightly seat the latter against the recess wall and to clamp the cutting blade in the blade holder.

The foregoing objects and advantages of the invention will become more apparent from a consideration of the detailed description to follow in conjunction with the drawing annexed hereto wherein:

FIG. 1 is an elevation view partially in section, of a portable power planer showing the cutterhead according to the invention;

FIG. 2 is a longitudinal section taken along line II—II of FIG. 3 and illustrates a cutterhead according to a preferred embodiment of the invention;

FIG. 3 is a section taken along line III—III of FIG. 2 and illustrates the clamping member for clamping the cutting member tightly in its seat;

FIG. 4 is a section taken along line IV—IV of FIG. 2 and illustrates the angular positioning means for angularly positioning the cutting member so that one of the cutting edges thereof is positioned at a predetermined angle with respect to the substantially cylindrical surface of the cutterhead;

FIG. 5 is a section view illustrating another embodiment of the invention wher in the cutterhead is provided with an alternate arrangement for clamping the cutting m mber in the cutterhead; and,

FIG. 6 is a fragmentary vi w showing still a furth r embodiment of the inv nti n wherein a blade holder is held within the cutterhead.

FIG. 1 illustrates a portable power planer equipped with a cutterhead 10 according to the invention. The cutterhead 10 is rotatably mounted in the planer 1 and carries cutting members 14 for planing the surface of a workpiece such as wood.

With reference to FIGS. 2 to 4, the cutterhead 10 includes a cylindrical body 11 which is constructed to rotate at high speeds on the shaft 12 about the rotational axis 7.

The cylindrical body 11 is provided with two longitudinal seats 13 that extend inwardly from the surface 9. The seats 13 are formed in the body 11 and extend through the entire longitudinal length thereof as shown. The seats 13 are of a partially cylindrical section and define a longitudinal aperture "a" having a width less than the diameter "D" thereof (FIG. 3). If desired, the body 11 can be made by extruding aluminum with the seats 13 being formed therein during the extrusion process. The extruded aluminum member can then be cut into segments to make a plurality of cylindrical bodies 11.

Cutting means in the form of four-edge cutting member 14 can be laterally inserted into seat 13 in either one of the two directions as indicated by the arrows 2 and 3 of FIG. 2. The cutting members are preferably made from sintered hard steel.

The cutting member 14 is shaped from a cylindrical member by machining therein two identical channels 16 of rectangular section which extend longitudinally in the direction of the longitudinal axis of the cutting member. The channels 16 are arranged diametrically opposite each other and have bases 8 which extend crosswise along parallel chords and are almost equal to the diameter of the cutting member 14 measured at the rounded outer surfaces 4 and 5 between channels 16; in this way, four cutting edges 17 are defined in respective positions symmetrical with respect to the longitudinal axis of the cutting bar 14. The edges 17 are positioned opposite one another which, when appropriately sharpened, form four interchangeable cutting edges 17 of the cutting member 14. The cylindrical member that forms the core of the cutting member 14 has a diameter corresponding substantially to that of its seat 13 into which it is inserted.

The correct angular position of the cutting member 14 inside the seat 13 whereat one of the cutting edges 17 is at a predetermined angle of elevation with respect to the surface 9 is defined automatically by a pair of pins 18. With the angular position of the cutting member 14 defined by the pins 18, one of the cutting edges 17 projects tangentially from the external surface 9 of the cylindrical body 11. Each

of the pins 18 is secured in a corresponding seat 19 of the cylindrical body 11 and has an nd portion of predetermined length that projects into the seat 13 so as to mate freely with one of the two machined channels 16 of the cutting member 14 upon the insertion of the cutting member 14 into its seat. Accordingly, to place the cutting member 14 into its seat 13, the cutting member 14 is merely positioned by the operator so that one of the channels 16 is in alignment with the pins 18 and thereafter is inserted laterally in the direction of one of the arrows 2 or 3 as described above in connection with FIG. 2.

With the cutting member 14 firmly in place, it cannot emerge frontally from its seat 13 in the direction of the arrow 6 of FIG. 4 in response to the centrifugal force developed during rotation of the cutterhead 10. This is true because the seat 13 is a recess having a recess wall 24 which extends inwardly into the cylindrical body 11 away from the aperture "a" to surround and hold the cutting member 14 against the centrifugal forces. In this connection, it is noted that the diameter "D" of the seat 13 is greater than the width "a" of the aperture.

To prevent any possibility of an unwanted lateral dislodgement of the cutting member 14 from its seat 13, the cutting member is firmly locked in place by means of at least one securing screw 20. If only one such screw 20 is provided, it is preferably arranged centrally within the cylindrical body 11 between the alignment pins 18. The screw 20 threadably engages a threaded bore 21 coaxial with a larger diameter counter-bore 22 through which access to the recessed head 23 of the screw 20 can be had with an Allen wrench. The screw 20 acts upon the base 8 of one of the two channels 16 and forces the opposite cylindrical surface portions 4 and 5 of the cutting member 14 directly against the wall 24 of the seat 13.

Once the operator has inserted the cutting member 14 into its seat 13 as described above, there is no longer any need to perform a difficult registering operation to position the selected cutting edge 17 into its proper operating position. Proper positioning of the cutting member 14 is achieved with an economical and simple arrangement of the pins 18 coacting with channels 16. This arrangement makes it unnecessary to provide for carefully machined surfaces in the cylindrical body of cutterhead against which the cutting member is pressed by means of a holding piece as is taught in the prior art.

Referring again to the drawing, when a cutting edge 17 has been worn down, the operator merely substitutes therefor another one of the edges 17 until all four cutting edges have been used up, after which the cutting member 14 can be discarded. The cutting edge 17 is changed by first releasing the screw 20, then laterally withdrawing the cutting member 14 from its seat 13 and rotating the same about its longitudinal axis in such a way that a new cutting edge 17 will project above the surface 9. The cutting member 14 is again inserted into the seat 13 so that the new cutting edg 17 is in cutting position. The screw 20 is then tightened.

FIG. 5 is an alternate embodiment of the cutterhead of the invention in which the cutting member 14 is fastened in its seat by means of a screw 25 that can be tightened to clamp the walls of the seat recess 13 tightly on the cutting member 14. The wall portion 27 can yield in response to the screw 25 because of the slot 26 which divides the recess wall into two mutually adjacent wall surfaces 28 and 29. The slot 26 extends throughout the length of the seat recess 30 and is formed in the cylindrical body 11 to a predetermined depth along the median plane of the cutting edges 17 of the cutting member 14.

FIG. 6 discloses still another embodiment of the invention wherein a blade holder 31 is inserted in the seat recess 13 of the cylindrical body 11. The blade holder 31 has a slot 32 formed therein for receiving a cutting blade 33. A pin 34 is press-fitted into a bore 35 of the blade holder 31 and has a rounded end 36 which engages with an arcuate recess 37 formed in the blade 33.

The recess 13 has a recess wall 24 which extends inwardly away from the aperture "a" to surround and hold the blade holder 31 against centrifugal forces acting thereupon during rotation of the cylindrical body 11 about its rotational axis.

The pin 18 angularly fixes the blade holder 31 so that the cutting blade 33 penetrates the aperture "a" at a predetermined angle of elevation with respect to the surface 9 of body 11. A screw is mounted in the cylindrical body 11 as shown in FIG. 3 for directly engaging the blade holder 31 to tightly seat the latter against the recess wall 24 and to clamp the cutting blade 33 in blade holder 31.

Should the screw become loose during operation, the blade holder 31 will still be held from flying out radially in response to centrifugal force by the recess wall 24. Although a loosening of the screw 20 would also cause the blade 33 to become loose, it too will be held against centrifugal force by the rounded end 36 of pin 34 in engagement with the blade 33 at its arcuate recess 37.

Claims

1. A cutterhead for a portable power planer includes a cylindrical body (11) having a substantially cylindrical surface (9) and defining a rotational axis (7) about which said cylindrical body (11) rotates during normal operation of the power planer (1) and a solid elongated cutting member (14) defining a longitudinal axis and having a channel formed therein to define at least two cutting edges (17); said cylindrical body (11) having an elongated recess (13) formed therein for holding said cutting member

(14); said recess (13) extending in a direction parallel to said axis (7) and defining a longitudinal aperture (a) in said surface (9) for accommodating one of said cutting edges (17); angular positioning means (18) for angularly fixing said cutting member (14) so that one cutting edge (17) penetrates said aperture (a) at a predetermined angle of elevation with respect to said surface (9), characterized by said recess (13) having a recess wall (24) extending inwardly away from said aperture (a) to surround and hold said cutting member (14) against the centrifugal forces acting thereupon during the rotation of said cylindrical body (11); screw means (20) mounted in said cylindrical body (11) for directly engaging said cutting member (14) to tightly seat the latter against said recess wall; said cutting member (14) having two channels (16) formed therein to define four cutting edges (17) extending parallel to said longitudinal axis, said cutting member (14) having rounded surfaces (4, 5) between said channels (16); said recess wall (24) defining a curved surface having a curvature corresponding substantially to the curvature of said rounded surfaces (4, 5); said angular positioning means including at least one pin (18) projecting into said recess (13) for engaging said cutting member (14) in one of said channels (16) thereby positioning said one edge (17) at said predetermined angle; and said screw means being a screw (20) threadably mounted in said cylindrical body (11) for advancing into said recess (13) and engaging said cutting member (14) to tightly clamp said cutting member (14) at its rounded outer surfaces (4, 5) against said curved surface of said recess wall (24).

2. The cutterhead of claim 1 characterized in: said recess (13) being open at least at one of its longitudinal ends to permit lateral insertion of said cutting member (14) therein; and, said curved surface defined by said recess wall (24) being of cylindrical configuration and having a diameter (D) greater than the width of said aperture (a).

3. A cutterhead for a portable power planer includes: a cylindrical body having a substantially cylindrical surface (9) and defining a rotational axis (7) about which said cylindrical body (11) rotates during normal operation of the power planer (1) and a solid elongated cutting member (14) having two channels (16) formed therein to define at least two cutting edges (17); said cylindrical body (11) having an elongated recess (13) formed therein for holding said cutting member (14); said recess defining a longitudinal aperture (a) in said surface (9) for accommodating one of said cutting edges (17), said recess (13) having a recess wall (24) extending inwardly away from said aperture (a) to surround and hold said cutting member (14) against the centrifugal forces acting thereupon during the rotation of said cylindrical body (11); said cutting member (14) being positioned in said recess (13) so that said one cutting edge (17) penetrates said aperture (a) at a predetermined angle of elevation with respect to said surface (9); said cylindrical body (11) having a slot (26) formed therein at the bottom of said recess (13) thereby dividing said recess wall into two mutually adjacent wall surfaces (28, 29), each of said wall surfaces (28, 29) extending from said slot (26) to said aperture (a); and, screw means (25) extending through said slot (26) for tightly clamping said wall surfaces (28, 29) onto said cutting member (14), characterized in: angular positioning means including two pins (18) projecting into said recess (13) for engaging said cutting member (14) in one of said channels (16) thereof thereby positioning said cutting member (14) so that said one cutting edge (17) penetrates said aperture (a) at said predetermined angle.

4. A cutterhead for a portable power planer includes: a cylindrical body (11) having a substantially cylindrical surface (9) defining a rotational axis (7) about which said cylindrical body (11) rotates during normal operation of the power planer (1) and a blade holder (31) having a slot (32) formed therein for receiving a cutting blade (33); said cylindrical body (11) having an elongated recess (13) formed therein for holding said blade holder (31); said recess (13) extending in a direction parallel to said axis (7) and defining a longitudinal aperture (a) in said surface (9) for accommodating the blade holder (31), said recess (13) having a recess wall (24) extending inwardly away from said aperture (a) to surround and hold said blade holder (31) against the centrifugal forces acting thereupon during the rotation of said cylindrical body (11) about said rotational axis (7); angular positioning means (18) for angularly fixing said blade holder (31) so that the cutting blade (33) penetrates said aperture (a) at a predetermined angle of elevation with respect to said surface (9); and screw means (20) threadably mounted in said cylindrical body (11) for directly engaging said blade holder (31) to tightly seat the latter against said recess wall (24) and said blade holder (31) being an elongated member defining a longitudinal axis and being characterized in having a channel (16) formed therein to extend in the direction of said longitudinal axis; said angular positioning means including two pins (18) projecting into said recess (13) for engaging said blade holder (31) in said channel (16) thereof thereby positioning said blade holder (31) so that the cutting blade (33) penetrates said aperture at said predetermined angle; and said screw means being a screw (20) to advance into said recess (13) and clamp the cutting blade (33) in said blade holder (31).

5. The cutterhead of claim 4 characterized in: said cylindrical body (11) having a bore (21) formed therein communicating with said recess (13); and, said screw (20) being threadably mounted in said bore (21).

Patentanspruch

1. Ein Messerkopf für eine m torbetrieben Handhobelmaschine umfaßt einen zylindrischen Körper (11), der eine im wesentlichen zylindrische Oberfläche (9) aufweist und eine Rotationsachse (7) definiert, um die sich der zylindrische Körper (11) während des normalen Betriebes der motorbetriebenen Hobelmaschine (1) dreht, ein festes längliches Messer (14), das eine Längsachse definiert und mit einer Nut versehen ist, die mindestens zwei Schneiden (17) bildet, wobei der zylindrische Körper (11) zur Halterung des Messers (14) eine längliche Ausnehmung (13) aufweist, die sich parallel zur Achse (7) erstreckt, wodurch in der Oberfläche (9) zur Aufnahme einer der Schneiden (17) eine längliche Öffnung (a) gebildet wird; weiters eine Winkeleinstellvorrichtung (18) zur winkelgerechten Befestigung des Messers (14), sodaß eine Schneide (17) sich unter einem bestimmten Erhebungswinkel zur Oberfläche (9) in die Öffnung (a) erstreckt, dadurch gekennzeichnet, daß die Ausnehmung (13) eine Wand (24) aufweist, die sich nach innen von der Öffnung (a) weg erstreckt und so das Messer (14) umgibt und gegen die während der Rotation des zylindrischen Körpers (11) darauf einwirkenden Zentrifugalkräfte festhält, weiters eine im zylindrischen Körper (11) gelagerte Schraubvorrichtung (20), die direkt am Messer (14) angreift, um den festen Sitz desselben an der Wand der genannten Ausnehmungswand zu bewirken, wobei das Messer (14) zwei Nuten (16) aufweist, die vier Schneiden (17) bilden, die sich parallel zur genannten Längsachse erstrecken, und das Messer (14) zwischen den Nuten (16) abgerundete Oberflächen (4, 5) hat, wobei die Ausnehmungswand (24) eine gekrümmte Fläche bildet, deren Krümmung im wesentlichen der Krümmung der abgerundeten Oberflächen (4, 5) entspricht, daß die Winkeleinstellvorrichtung mindestens einen Stift (18) aufweist, der sich in die Ausnehmung (13) erstreckt, um am Messer (14) in einer der Nuten (16) anzugreifen, wodurch die eine Schneide (17) unter dem genannten bestimmten Winkel fixiert wird, und daß die genannte Schraubvorrichtung eine Schraube (20) ist, die mit Hilfe eines Gewindes im zylindrischen Körper (11) gelagert ist, in die Ausnehmung (13) hineingedreht werden kann, um am Messer (14) anzugreifen und die abgerundeten Außenflächen (4, 5) des Messers (14) gegen die gekrümmte Fläche der Ausnehmungswand (24) zu klemmen.

2. Der Messerkopf nach Anspruch 1, dadurch gekennzeichnet, daß die Ausnehmung (13) zumindest an einem Längsende offen ist, um das seitliche Einführen des Messers (14) zu erlauben, und die genannte gekrümmte Fläche von der Ausnehmungswand (24) begrenzt wird, die eine zylindrische Form aufweist und deren Durchmesser (D) größer ist als die Breite der Öffnung (a).

3. Ein Messerkopf für eine motorbetri bene Handhobelmaschine umfaßt einen zylindrischen K rper (11), der eine im wesentlichen zylindrische Oberfläche (9) aufweist und eine Rotationsachse (7) defini rt, um die sich der zylindrische Körper (11) während des normalen Betriebes der motorbetriebenen Hobelmaschine dreht, ein festes längliches Messer (14), das zwei Nuten (16) aufweist, die mindestens zwei Schneiden (17) bilden, und der zylindrische Körper (11) eine längliche Ausnehmung (13) als Halterung des Messers (14) hat, wobei die genannte Ausnehmung zur Aufnahme einer der Schneiden (17) mit einer länglichen Öffnung (a) versehen ist, und die Ausnehmung (13) eine Wand (24) aufweist, die sich weg von der Öffnung (a) nach innen erstreckt und so das Messer (14) umgibt und gegen die während der Rotation des zylindrischen Körpers (11) darauf einwirkenden Zentrifugalkräfte festhält, wobei das Messer (14) in der Ausnehmung (13) so angeordnet ist, daß sich eine Schneide (17) unter einem bestimmten Erhebungswinkel zur Oberfläche (9) in die Öffnung (a) erstreckt, und der zylindrische Körper (11) an der Unterseite der Ausnehmung (13) mit einem Schlitz (26) versehen ist, wodurch die genannte Ausnehmungswand in zwei einander gegenüberliegenden Wandflächen (28, 29) geteilt wird, die sich vom Schlitz (26) zur Öffnung (a) erstrecken, weiters Schraubvorrichtungen (25), die durch den Schlitz (26) verlaufen und den festen Sitz der Wandflächen (28, 29) am Messer (14) bewirken, gekennzeichnet durch eine Winkeleinstellvorrichtung umfassend zwei Stifte (18), die sich in die Ausnehmung (13) erstrecken, um am Messer (14) in einer der Nuten (16) anzugreifen, wodurch das Messer (14) so angeordnet ist, daß sich eine Schneide (17) unter dem genannten vorbestimmten Winkel in die Öffnung (a) erstreckt.

4. Ein Messerkopf für eine motorbetriebene Handhobelmaschine umfaßt einen zylindrischen Körper (11), der eine im wesentlichen zylindrische Oberfläche (9) aufweist und eine Rotationsachse (7) definiert, um die sich während des normalen Betriebes der motorbetriebenen Hobelmaschine der zylindrische Körper (11) dreht, und eine Klingenhalterung (31), die zur Aufnahme einer Schneidklinge (33) einen Schlitz (32) aufweist, wobei der zylindrische Körper (11) zur Fixierung der Klingenhalterung (31) eine längliche Ausnehmung (13) aufweist, die Ausnehmung (13) sich parallel zur Achse (7) erstreckt und in der Oberfläche (9) zur Aufnahme der Klingenhaltetung (31) eine längliche Öffnung (a) bildet, und die Ausnehmung (13) eine Wande (24) hat, die sich weg von der Öffnung (a) nach innen erstreckt und so die Klingenhalterung (31) umgibt und gegen die während der Rotation des zylindrischen Körpers (11) um die Rotationsachse (7) darauf einwirkenden Zentrifugalkräfte festhält, weiters eine Winkeleinstellvorrichtung (18) zur winkelgerechten Befestigung der Klingenhalterung

(31), sodaß sich die Schneidklinge (33) unter einem bestimmten Erhebungswinkel zur Oberfläche (9) in die Öffnung (a) erstreckt, und eine Schraubvorrichtung (20), die mit Hilfe eines Gewindes im zylindrischen Körper (11) gelagert ist, direkt an der Klingenhalterung (31) angreift und so den festen Sitz derselben an der Ausnehmungswand (24) bewirkt, wobei die Klingenhalterung (31) ein länglicher Teil ist, der eine Längsachse definiert und durch eine Nut (16) gekennzeichnet ist, die in Richtung der genannten Längsachse verläuft, wobei die genannte Winkeleinstellvorrichtung zwei Stifte (18) aufweist, die in die Ausnehmung (13) ragen und die Klingenhalterung (31) in der Nut (16) festhalten, wodurch die Klingenhalterung (31) eine solche Lage einnimmt, daß sich die Schneidklinge (33) unter dem genannten bestimmten Winkel in die genannte Öffnung erstreckt, und wobei die genannte Schraubvorrichtung eine Schraube (20) ist, die in die Ausnehmung (20) gedreht wird und die Schneidklinge (33) der Klingenhalterung (31) festklemmt.

5. Der Messerkopf nach Anspruch 4, dadurch gekennzeichnet, daß der zylindrische Körper (11) mit einer Bohrung (21) versehen ist, die mit der Ausnehmung (13) in Verbindung steht, wobei die Schraube (20) mittels eines Gewindes in der Bohrung (21) gelagert ist.

Revendications

1. Tête porte-lames pour rabot à main mû par un moteur du type comprenant: un corps cylindrique (11) à surface extérieure sensiblement cylindrique (9) et qui définit un axe de rotation (7) autour duquel ledit corps cylindrique (11) tourne pendant le fonctionnement normal du rabot, un organe de coupe plein et de forme allongée (14) qui définit un axe longitudinal et présente une gorge qui forme au moins deux arêtes de coupe (17), une cavité allongée (13) formée dans le corps cylindrique (11) pour maintenir en place ledit organe de coupe (14) et qui s'étend dans une direction parallèle audit axe (7) de manière à définir une ouverture longitudinale (a) dans ladite surface cylindrique (9) pour y loger une des arêtes de coupe (17), des moyens de positionnement angulaire (18) pour bloquer ledit organe de coupe (14) dans une position angulaire telle qu'une arête de coupe (17) pénètre dans ladite ouverture (a) suivant un angle d'élévation déterminé par rapport à ladite surface (9), caractérisée en ce que:

a) ladite cavité (13) présente un paroi (24) orientée vers l'intérieur par rapport à ladite ouverture (a) de manière à entourer et maintenir l'organe de coupe (14) contre les forces centrifuges qui agissent sur cet organe pendant la rotation dudit corps cylindrique (11);

b) une vis (20) est montée dans ledit corps cylindrique (11) afin de porter directement contre ledit organe de coupe (14) et pour que celui-ci appuie fortement contre ladite paroi de la cavité;

c) l' rgane de oupe (14) possède deux gorges (16) qui y f rment quatre arêtes de coupe (17) orientées parallèlement audit axe longitudinal, cet organe de coupe (14) présentant des surfaces courbes entre les deux gorges (16), tandis que la paroi (24) de la cavité définit une surface incurvée dont la courbure correspond en substance à celle desdites surfaces courbes (4, 5);

d) le moyen de positionnement angulaire comprend au moins un goujon (18) qui fait saillie dans ladite cavité (13) de manière à porter contre l'organe de coupe (14) qui se trouve dans l'une desdites gorges (16), afin d'assurer le positionnement de l'une desdites arêtes de coupe (17) suivant ledit angle déterminé, et

e) la vis précitée (20) est engagée dans un taraudage dudit corps cylindrique (11) de manière à pouvoir avancer dans ladite cavité (13) et porter contre ledit organe de coupe (14) afin de l'appliquer énergiquement par l'une de ses surfaces extrêmes arrondies (4, 5) contre ladite surface incurvée de la paroi de la cavité (24).

2. Tête porte-lames selon la revendication 1, caractérisée en ce que ladite cavité (13) est ouverte à l'une au moins des ses extrémités longitudinales pour permettre d'y introduire latéralement l'organe de coupe (14), et que la surface courbe définie par la paroi (24) de la cavité a une forme cylindrique et un diamètre (D) supérieur à la largeur de ladite ouverture (a).

3. Tête porte-lames pour rabot à main mû par un moteur comprenant:

a) un corps cylindrique (11) ayant une surface sensiblement cylindrique (9) et qui définit un axe de rotation (7) autour duquel ledit corps cylindrique (11) tourne pendant le fonctionnement normal du rabot à main mû par un moteur;

b) un organe allongé de coupe (14) qui comporte deux gorges (16) définissant au moins deux arêtes de coupe (17);

c) une cavité allongée (13) formée dans ledit corps cylindrique pour maintenir ledit organe de coupe (14);

d) ladite cavité (13) définissant une ouverture longitudinale (a) dans ladite surface (9) afin de pouvoir recevoir l'une des arêtes de coupe précitées (17), cette même cavité (13) comportant une paroi (24) qui s'étend vers l'intérieur à partir de ladite ouverture (a) afin d'entourer et de maintenir ledit organe de coupe (14) contre les forces centrifuges qui agissent sur cet organe pendant la rotation dudit corps cylindrique (11);

e) ledit organe de coupe (14) étant placé dans ladite cavité (13) de façon que ladite arête de coupe (17) pénètre dans ladite ouverture (a) suivant un angle déterminé d'élévation par rapport à ladite surface (9);

f) le corps cylindrique (11) comportant une fente (26) au fond de ladite cavité (13) afin de

diviser ladite paroi de cavité n deux surfaces adjacentes ntr lles (28, 29), chaque surface (28, 29) s'étendant ntre ladite fente (26) et ladite ouverture (a), et

g) une vis (25) qui traverse cette fente (26) afin de serrer énergiquement lesdites surfaces de paroi (28, 29) contre l'organe de coupe (14), caractérisée en ce que les moyens de positionnement angulaire comprennent deux goujons (18) qui font saillie dans la cavité (13) pour engager ledit organe de coupe (14) dans l'une des gorges précitées (16) afin d'assurer le positionnement dudit organe de coupe (14) de telle sorte que l'une de ses arêtes de coupe (17) pénètre dans ladite ouverture (a) suivant un angle déterminé.

4. Tête porte-lames pour un rabot à main mû par moteur, comprenant:

a) un corps cylindrique (11) ayant une surface sensiblement cylindrique (9) qui définit un axe de rotation (7) autour duquel ledit corps cylindrique (11) tourne pendant le fonctionnement du rabot à moteur (1), et

b) un porte-lame (31) dans lequel est formée une fente (32) destinée à recevoir une lame de coupe (33);

c) dans ledit corps cylindrique (11), une cavité de forme allongée (13) pour maintenir en place ledit porte-lame (31);

d) ladite cavité (13) s'étendant dans une direction parallèle audit axe (7) et définissant une ouverture longitudinale (a) dans ladite surface (9) pour y loger le porte-lame (31);

e) une paroi (24) dans ladite cavité (13) qui s'étend vers l'intérieur à partir de ladite ouverture (a) de manière à entourer et maintenir le porte-lame (31) contre les f rces centrifuges qui agissent sur celui-ci pendant la rotation du corps cylindrique (11) autour de l'axe de rotation précité (7);

f) des moyens de positionnement angulaire (18) pour fixer angulairement le porte-lame (31) de telle sorte que la lame de coupe (33) pénètre dans ladite ouverture (a) selon un angle déterminé d'élévation par rapport à ladite surface (9);

g) une vis engagée dans un taraudage dudit corps cylindrique (11) afin d'agir directement sur le porte-lame (31) et de bloquer énergiquement celui-ci contre ladite paroi (24) de la cavité (13), et

h) le porte-lame étant constitué par un corps de forme allongée qui engendre un axe longitudinal, caractérisée en ce qu'il comporte une gorge (16) qui s'étend dans la direction dudit axe longitudinal, que lesdits moyens de positionnement angulaire comportent deux goujons (18) qui émergent de ladite cavité (13) de manière à porter contre le porte-lame (31) et à s'engager dans la gorge (16) de celui-ci, pour positionner le porte-lame (31) afin que la lame de coupe (33) s'engage dans ladite ouverture (a) suivant ledit angle pré-déterminé; et que la vis (20) est destinée à avancer dans ladite cavité (13) pour y bloquer la lame de coupe (33) dans le porte-lame (31).

5. Tête porte-lames selon la revendication 4, caractérisée en ce que le corps cylindrique (11) présente un alésage taraudé (21) qui communique avec ladite cavité (13), et que la vis (20) est montée dans cet alésage taraudé (21).

FIG. 1

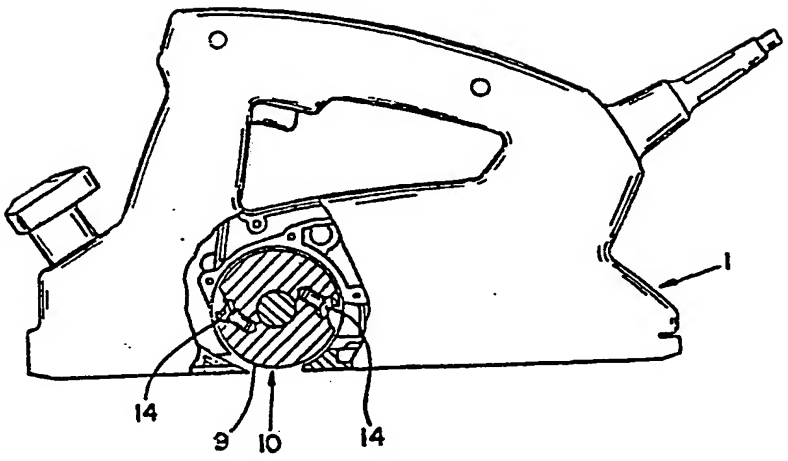
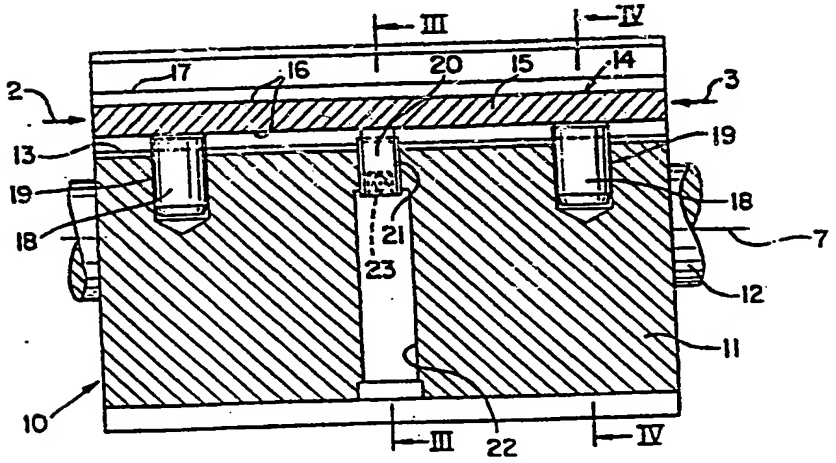

1
14
9
10
14

FIG. 2


III
IV
17
16
20
15
14
2
3
13
19
19
18
18
21
23
7
12
11
10
III
22
IV

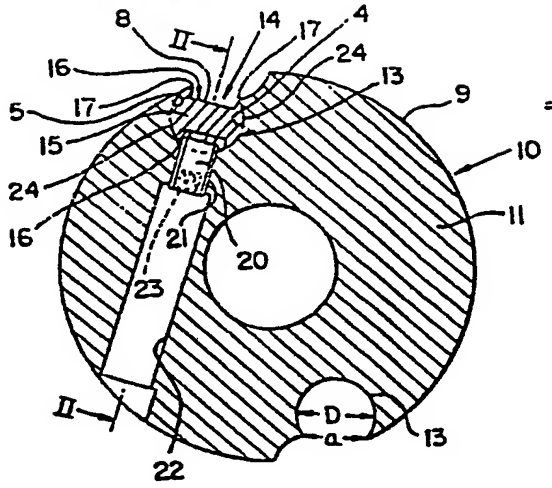


FIG. 3

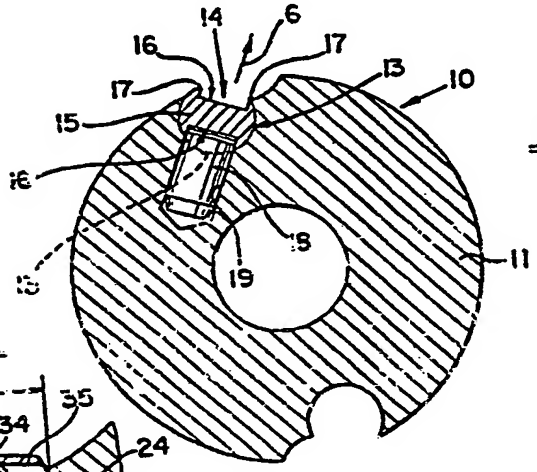


FIG. 4

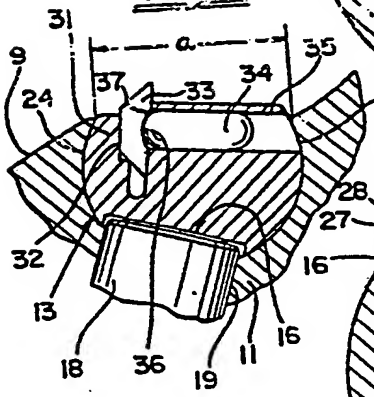


FIG. 6

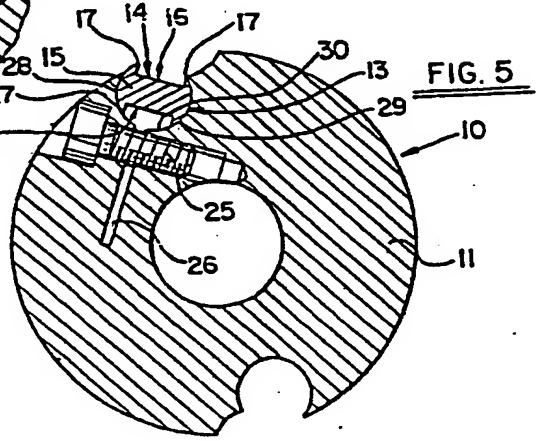


FIG. 5